

Appl. No. 10/507,100  
Amdt. dated June 13, 2006  
Reply to Office action of March 13, 2006  
Atty. Docket No. AP928USN

### REMARKS

Claims 1, 2, 7, 8, 9, 13, 18, 19, 20, 29, 30, 32, 33, 34, 35, 36, 44, 45, 46, 47 and 49 to 52 are in this application. Claims 1, 18, 29, 30, 32, 34, 44, 45, 49, 51 and 52 have been amended.

It is requested that the Finality of the office action be rescinded as premature for the reasons set out below and the foregoing amendments made of record. The amendments do not raise new issues but rather correct typographical errors or informalities and/or clarify the language of the main claims.

In the office action, claim 1, 2, 7, 8, 9, 13, 18, 19, 20, 29, 30, 32, 33, 34, 35, 36, 44, 45, 46, 47 and 49 to 52 were rejected under 35 U.S.C. 102(b) as anticipated by Chandross *et al.* (EP938027 or US6,268,089). With respect, the rejection is traversed on the grounds that the examiner apparently has misconstrued claims 1 and 32, specifically by not appreciating that claim 1 and claim 32 each require two interpenetrating networks, one inorganic and the other organic-inorganic (organically-modified).

In the office action, the examiner stated that Chandross *et al.* disclose a material comprising a "hybrid inorganic-organic, three-dimensional matrix, in which is distributed a photoimageable system comprising one or more photoactive organic monomers". With respect, whereas Chandross *et al.* use a single inorganic-organic matrix to contain the photoactive species, the present applicant's previously-submitted claim 1 stated that "the host matrix comprises a material formed by interpenetrating networks and (*sic*) inorganic and organically-modified phases. The word "and" was a typographical error and should have read "of". This error was obvious in view of the following statement on page 8 of the previous response, "In contrast to the disclosures by Chandross *et al.*.... the material of claim 1, as amended, comprises at least two interpenetrating networks of inorganic and organically modified (organic-inorganic) matrixes."

The term "organically-modified phases" in the previous claim 1 and "organically modified matrixes" in the response revealed a certain lack of consistency in terminology which has been addressed by replacing "phases" with "networks". Thus, in claim 1, the entire phrase

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"interpenetrating networks of inorganic and organically-modified phases" has been replaced by "an inorganic network and an organic-inorganic network interpenetrating each other". In addition, the elements of claims 1 and 32 have been re-ordered for greater clarity.

These amendments merely clarify what would have been apparent to a skilled person from the amendments to claims 1 and 32 and supporting arguments presented in the previous response, bearing in mind the dictum by the Court of Appeals of the Federal Circuit that claims must be construed in the context of the specification and, where applicable, the file history (See, for example, *Phillips v. AWH, CAFC en banc*, 2005). It is submitted, therefore, that the amendments to claims 1 and 18 are permissible after Final rejection since they do not raise new issues or require further search. While the amendments to claims 1 and 32 clarify the wording to facilitate interpretation, most of the amendments to the dependent claims merely correct antecedent problems which have just come to light.

With clauses indented to facilitate construction, claim 1 now reads:

1. A photosensitive material comprising

a host matrix formed by an inorganic network and an organic-inorganic network interpenetrating each other,

the host matrix containing at least one organic species having a refractive index which changes upon exposure to actinic radiation.

Thus, the host matrix comprises two interpenetrating networks. One is an inorganic network, for example silica glass. The other is an organic-inorganic network, for example an organically-modified silicate. The photosensitive organic species is contained within the matrix formed by the two interpenetrating networks.

Chandross *et al.* disclose only a single inorganic-organic matrix (network) with the photoactive organic species contained within it. Chandross *et al.* neither disclose nor suggest a host matrix comprising an inorganic network interpenetrating an organic-inorganic network, the host matrix containing the photoactive species.

Accordingly, claim 1 is not anticipated by Chandross *et al.* The same applies to claim 32, which is the corresponding independent method claim.

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All other claims are dependent upon one or other of claims 1 and 32 and so include its limitations. Consequently, the dependent claims are not anticipated for the same reasons.

It appears from the examiner's comment about claim 29 in paragraph 3 of the office action that the absence of the formula for tetraalkoxysilane could lead to confusion. Thus, the Examiner stated *"With respect to the precursor structure discussed on page 9 of the response, no such structure for an inorganic precursor is claimed. The instant claims simply require a material having an inorganic-organic matrix or wherein the matrix is prepared from various functional organoalkoxysilane, which meet the formula of the instant claim 29 (which is different from the formula disclosed on page 9 of the response). The Chandross reference does appear to meet these limitations as discussed above."*

To the contrary, the precursor of the inorganic matrix is claimed in original claim 29 (and also in claim 19) as "tetraalkoxysilane". Instead of using in the claim the chemical formula  $M(OR)_4$  with M being Si element, the applicant used the chemical name of the compound, that is tetraalkoxysilane. Because the formula and the chemical name are regarded as equivalent and complete representations of a chemical compound, it was not deemed necessary to use both in claim 29. In view of the examiner's comment, however, the formula has been added to claim 29.

In view of the foregoing, it is submitted that all claims of record are patentable over the cited references and early and favourable reconsideration of the application is respectfully requested.

Respectfully submitted,



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